



INNOVATION IN  
GI MEDICINE

March 19, 2020

## Safe Harbor Statement

This presentation contains forward-looking statements. All statements other than statements of historical facts contained in this presentation, including statements regarding our future results of operations and financial position, business strategy, prospective products, product approvals, research and development costs, timing and likelihood of success, plans and objectives of management for future operations, and future results of current and anticipated products, are forward-looking statements.

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This presentation also contains estimates and other statistical data made by independent parties and by us relating to market size and growth and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. In addition, projections, assumptions, and estimates of our future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk.

# Executive leadership team



**Tachi Yamada,  
MD**  
Chairman

CMO & CSO, Takeda  
President Global Health,  
Gates Foundation  
Chairman R&D, GSK  
President, AGA



**Terrie Curran**  
CEO

President I&I  
Franchise, Celgene  
Led OTEZLA business from  
US launch through \$13b sale  
SVP Global Women's Health,  
Merck



**Azmi Nabulsi,  
MD**  
COO

Deputy CMO & CSO, Takeda  
Global Head Development,  
Takeda  
Division VP, Abbott



**Martin Gilligan**  
CCO

CVP Marketing, Market Access,  
BD, Celgene I&I Franchise  
Executive Director  
Marketing, J&J  
Global Brand Leader, Merck



**Joe Hand**  
CAO

EVP, Global HR and  
Corporate Service, Celgene  
Executive Committee,  
Celgene  
Attorney at Jones Day



**Tom Harris**  
SVP, Regulatory  
& Quality

SVP/Head of Global  
Regulatory, Takeda  
VP US Regulatory, Takeda  
Humira Global Project Head,  
Abbott



**Aditya Kohli,  
PhD**  
CBO

Principal, Frazier  
VP BD, Scout Bio  
Engagement Manager,  
McKinsey



**Eckhard Leifke,  
MD**  
CMO

CMO, Omeros  
Global Head CVM Early Project  
& External Opportunities, Sanofi



**Larry Miller**  
GC

General Counsel, Cycleron  
SVP and General Counsel,  
Blue Buffalo  
Chief Counsel, Pfizer  
Consumer Healthcare



**David Socks**  
CFO

Venture Partner, Frazier  
CEO, Outpost Medicine  
COO, Incline Therapeutics  
SVP, Cadence  
Pharmaceuticals

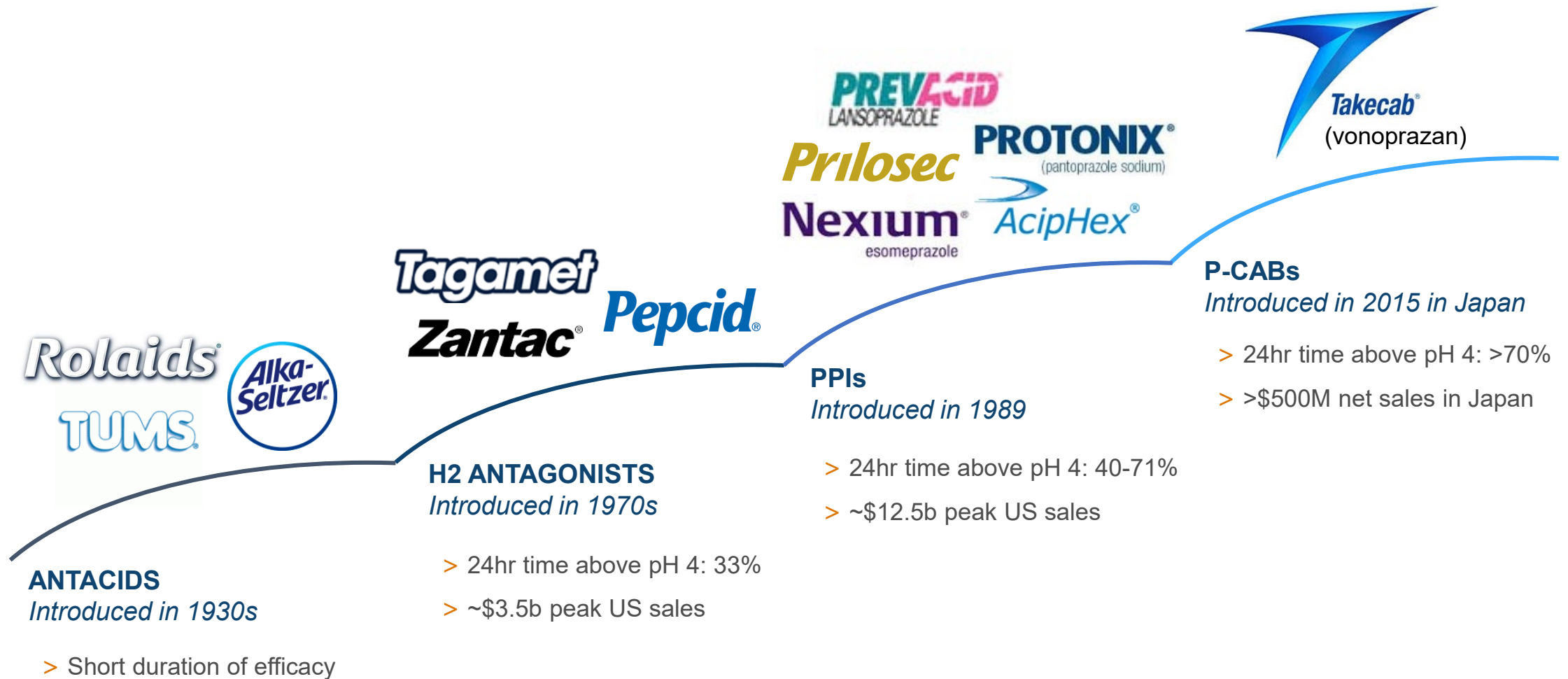
# POTENTIAL BREAKTHROUGH for acid-related disorders

## VONOPRAZAN

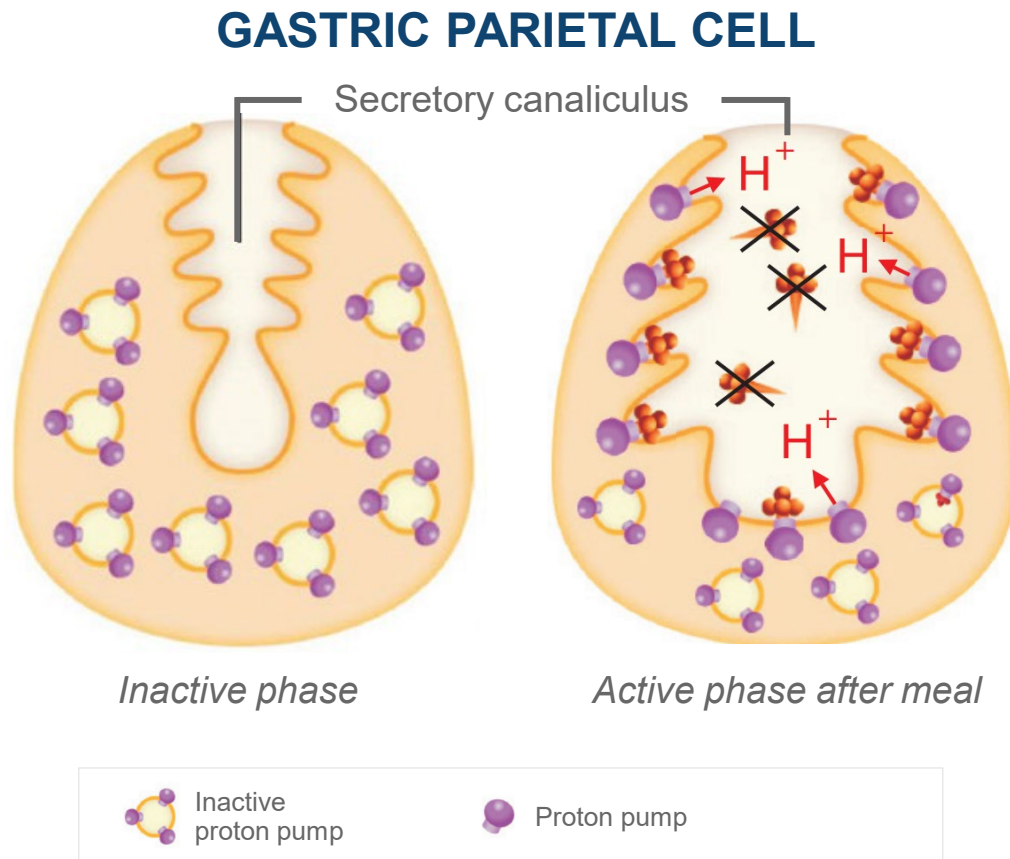


- > Potassium competitive acid blocker (P-CAB)
- > Potentially first-in-class in US, Europe, and Canada
- > US/EU/Canada rights licensed from Takeda
- > 18 Phase 3 studies completed by Takeda in >6,000 subjects
- > Approved in 13 countries across Asia and Latin America
- > >\$500M net sales in Japan in fourth full year on the market

# P-CABs: next generation of acid-control therapeutics



## PPIs: mechanism limits effectiveness



### PPI: COVALENTLY BINDING PRODRUG

Acid needed for activation but unstable in presence of acid

Meal required to stimulate pumps

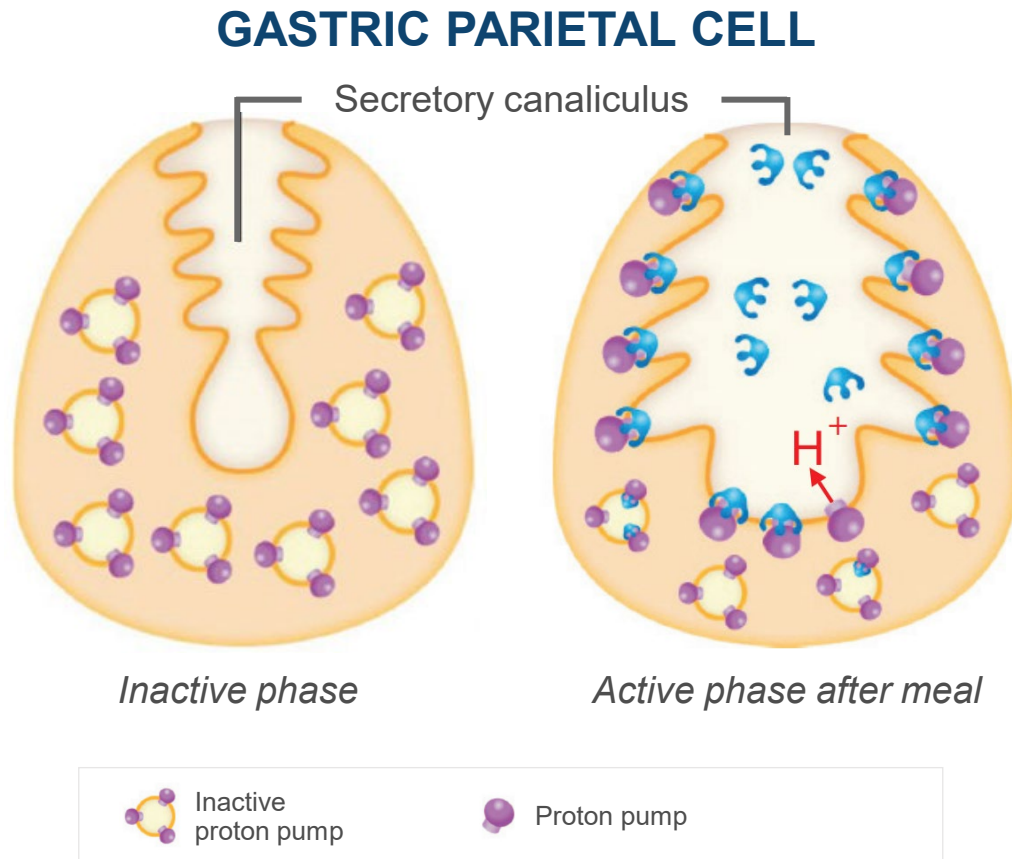
Short plasma half-life of 1 to 2 hours

Primarily metabolized via CYP2C19



- ✗ Slow onset of action
- ✗ Limited potency
- ✗ Limited duration of activity

# Vonoprazan: distinct mechanism designed to address PPI shortcomings



## VONOPRAZAN: COMPETITIVE ENZYME INHIBITOR

Stable in acid

Binds with slow dissociation rate

Long plasma half-life of 7 hours

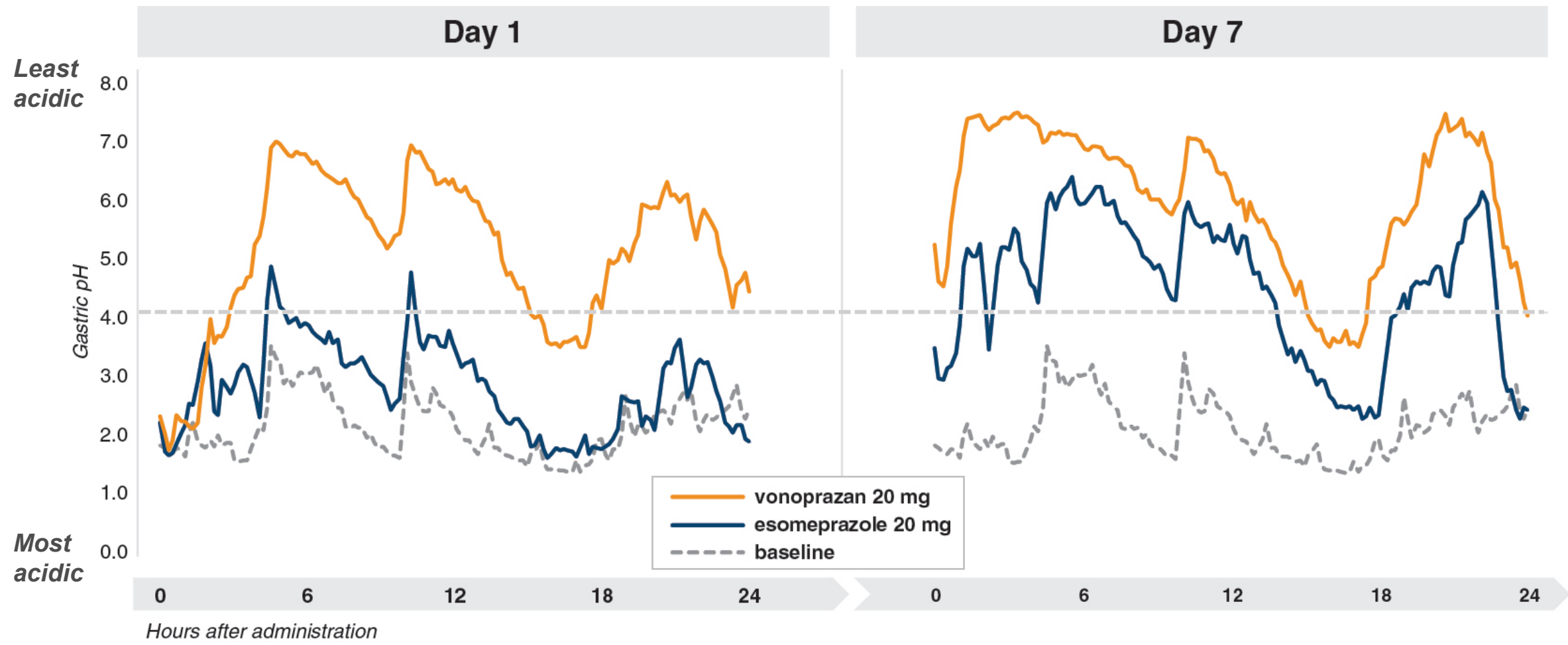
Primarily metabolized via CYP3A4/5



- ✓ **Rapid** onset of action
- ✓ **Potent** acid control
- ✓ **Durable** 24-hr activity



# Vonoprazan demonstrated faster and more potent acid control vs. PPI in healthy volunteers



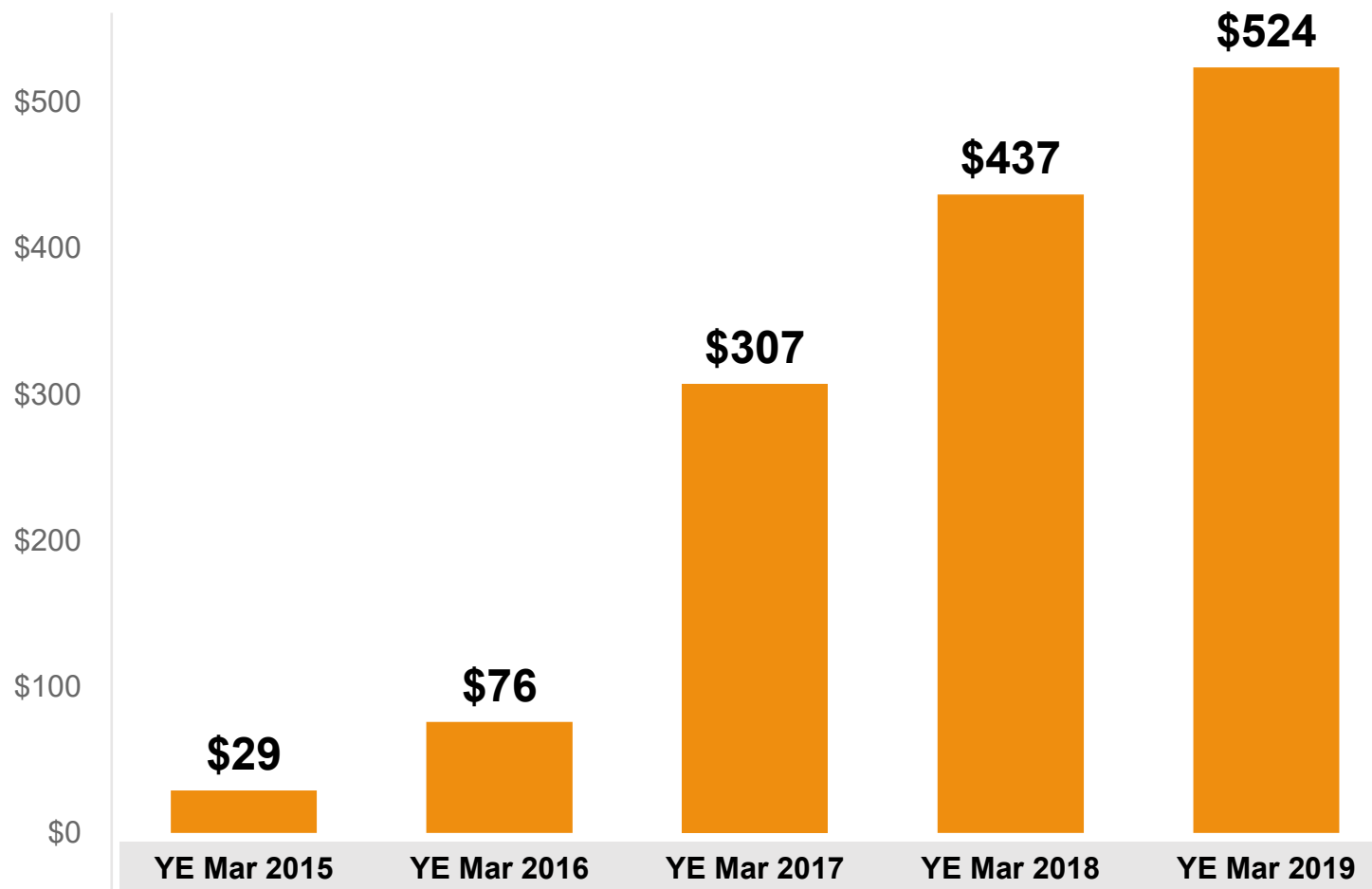


Vonoprazan  
achieved  
**RAPID ADOPTION**  
and strong  
sales growth  
in Japan

**TAKECAB®  
(VONOPRAZAN)  
JAPAN LAUNCH  
FEBRUARY 2015**

Takecab® is a registered trademark  
of Takeda Pharmaceutical Co. Ltd.





## VONOPRAZAN NET SALES, US\$ MILLION\*



*Note: vonoprazan net sales of approximately \$337M for the six months ended December 31, 2019*

*\*U.S. dollars based on the June 30, 2019 conversion rate of 0.009 dollar to one yen*

# Phathom pipeline

	TARGET INDICATION	PHASE 1*	PHASE 2*	PHASE 3	EXPECTED MILESTONES
Vonoprazan	<b>GERD</b>				
	Healing of erosive esophagitis and relief of heartburn				Phase 3 ongoing** Topline results 2021
	Maintenance of healing of erosive esophagitis and relief of heartburn				
Vonoprazan + antibiotics	<b>H. pylori treatment</b>				
	Dual therapy (vonoprazan + amoxicillin)				Phase 3 ongoing** Topline results 2021
	Triple therapy (vonoprazan + amoxicillin + clarithromycin)				

Phathom has development and commercialization rights to vonoprazan in the United States, Europe, and Canada

\*Phase 1 and 2 studies conducted by Takeda

\*\* On March 19, 2020, temporarily paused new patient randomization in view of COVID-19 global pandemic



## Vonoprazan for GERD

~65M US and ~50M EU5 patients with GERD

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6.1 billion PPI doses prescribed in US for the 12 months ended May 31, 2019

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~15-45% inadequately treated with PPIs

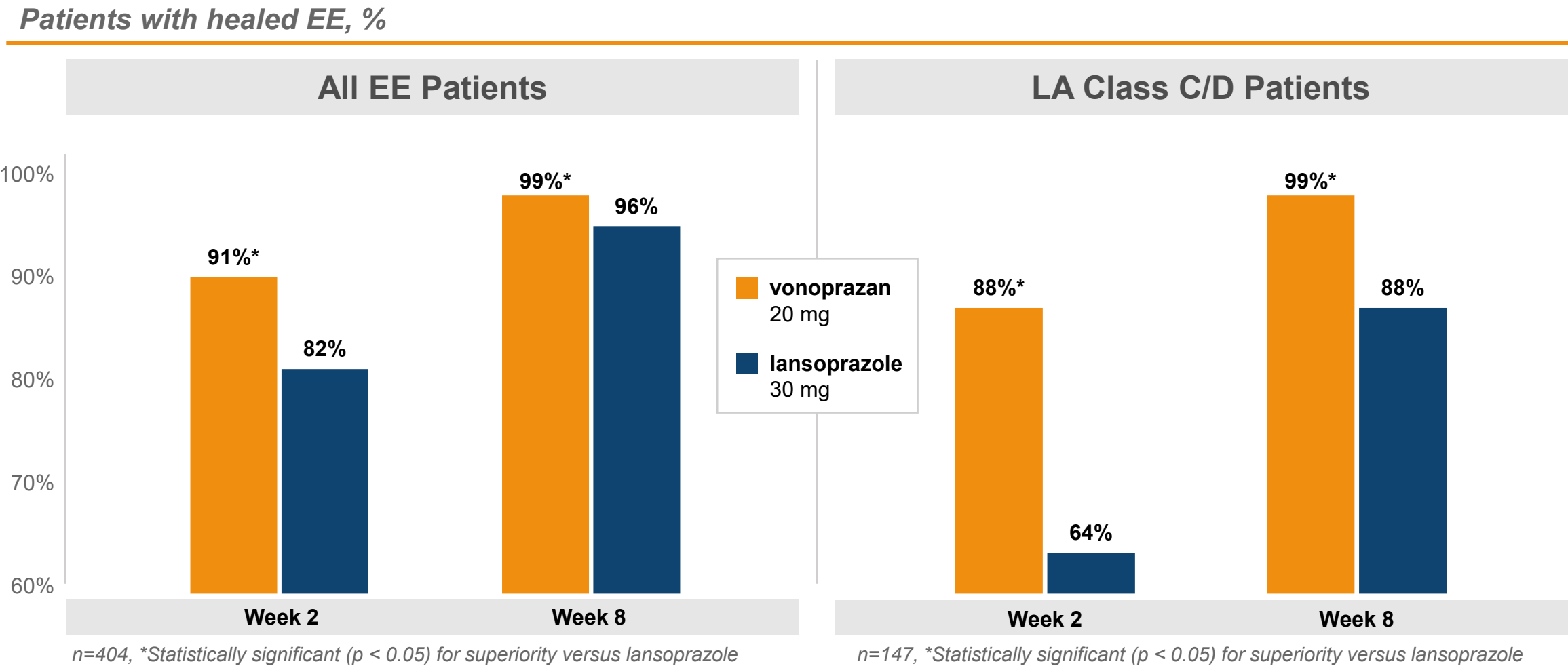
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Many patients experience breakthrough heartburn and recurrence of erosions while on PPIs

**Vonoprazan may offer more rapid, potent, and durable healing and symptom control**

El-Serag APT 2010; El-Serag Gut 2014; IQVIA data July 2019

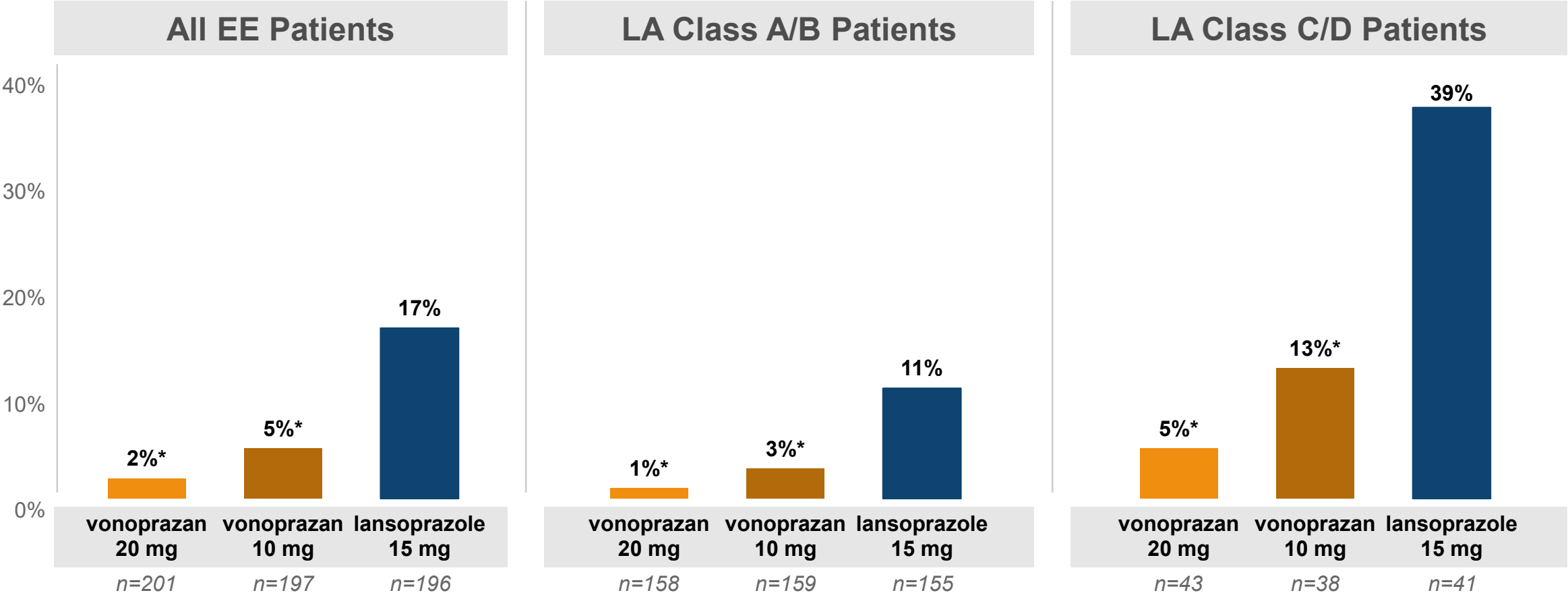
# Japan erosive esophagitis (EE) Phase 3: demonstrated faster and improved healing vs. PPI



Ashida et al, Aliment Pharmacol Ther 2016  
Note: clinical trial met prespecified non-inferiority endpoint and post hoc superiority test

# Japan erosive esophagitis (EE) Phase 3: demonstrated lower recurrence rates vs. PPI

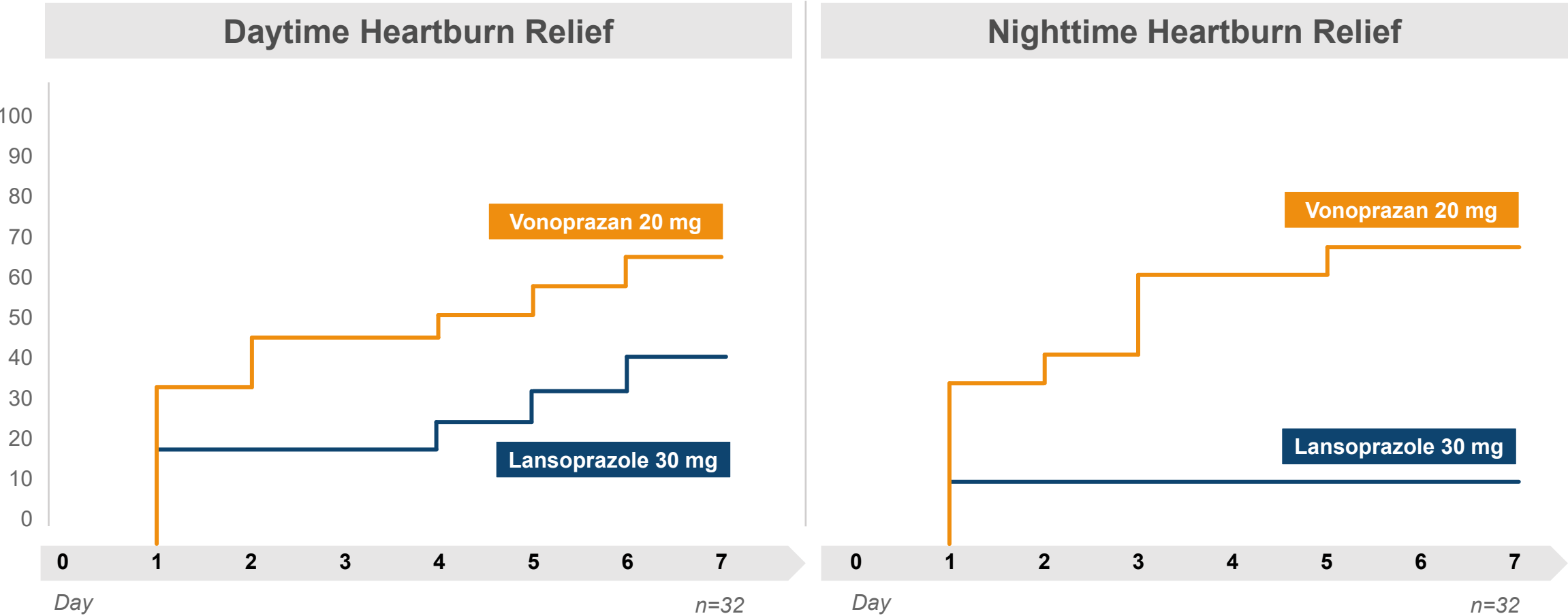
Patients with recurrence of EE at 6 months, %



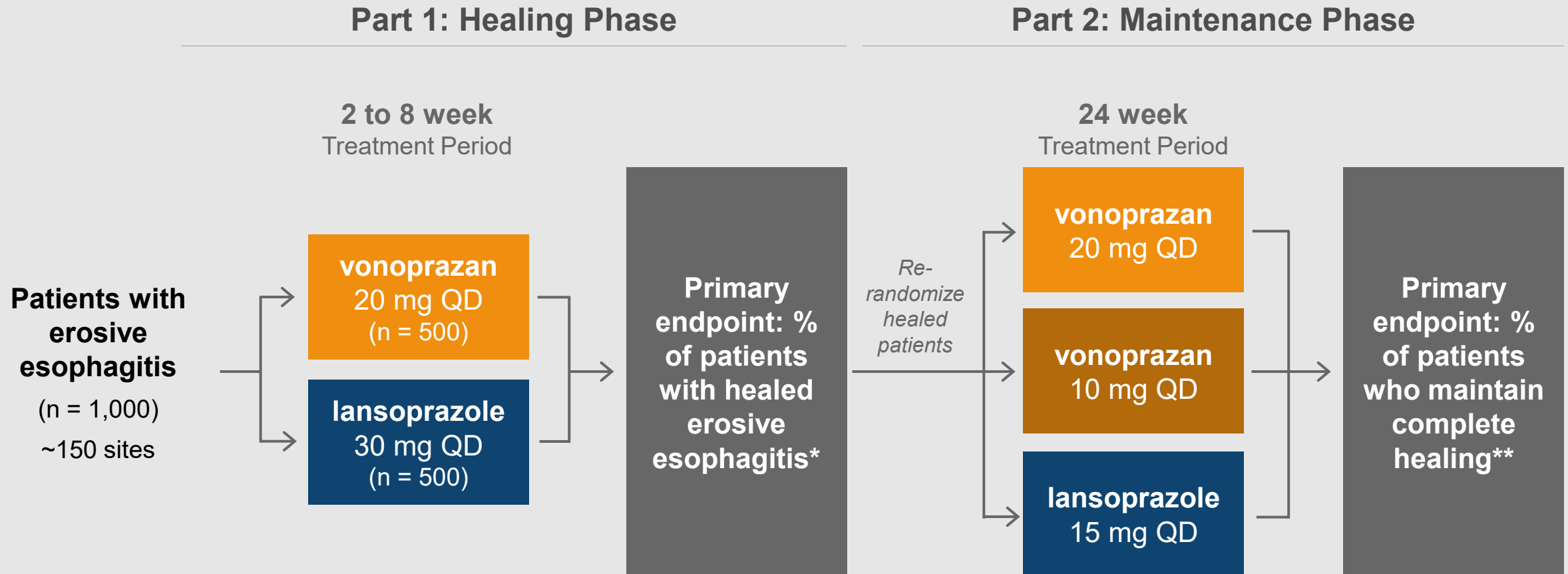
\*  $p < 0.05$  for superiority of vonoprazan 20 mg and vonoprazan 10 mg vs. lansoprazole

# Faster and more complete heartburn relief of vonoprazan vs. PPI

Patients with complete symptom relief, %



# Phathom US/Europe EE Phase 3 study design



Note: Diagnosis and healing of erosive esophagitis confirmed by endoscopy

\*Primary analysis of non-inferiority; key secondary analysis assessing superiority at week 2 in Los Angeles class C/D patients

\*\*Primary analysis of non-inferiority; if non-inferiority met, superiority will also be assessed





## Vonoprazan for *H. pylori* infection

~115M US and ~145M EU5 patients with *H. pylori*

~2.5M US patients treated annually

*H. pylori* designated as a Class I carcinogen by WHO and Qualifying Pathogen under FDA GAIN Act

Eradication rates have fallen to <80% due to increasing antibiotic resistance

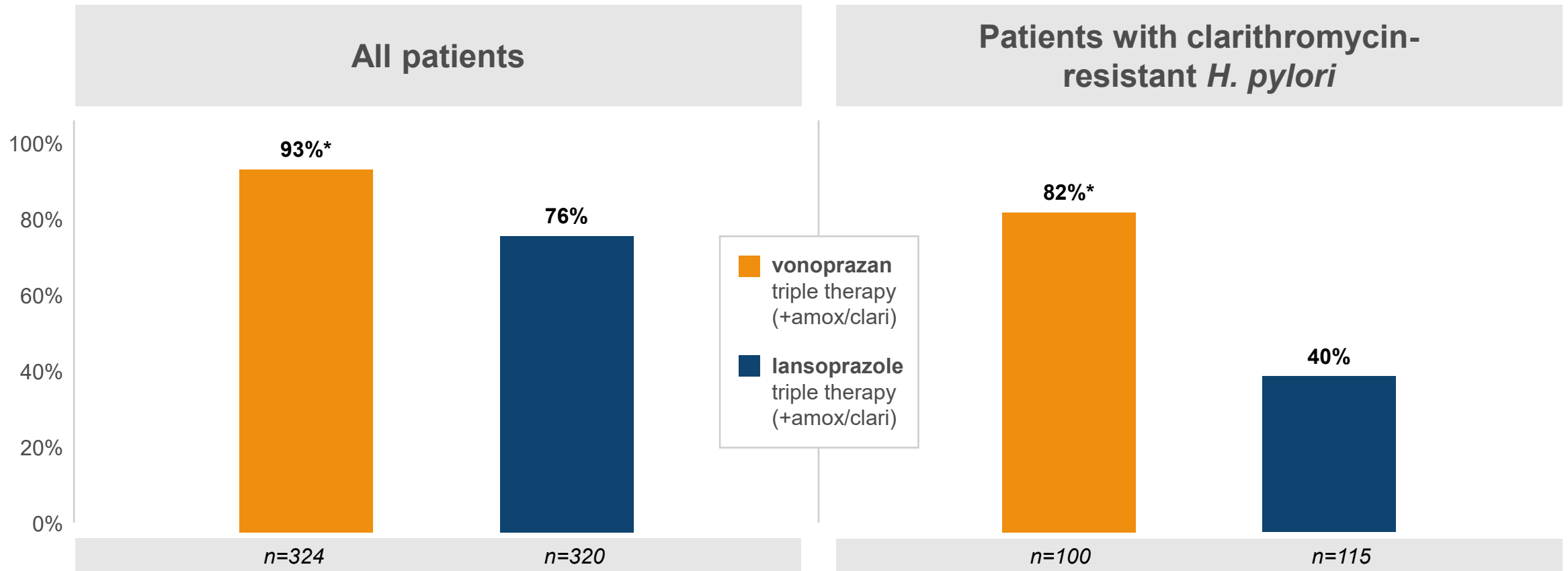
Antibiotic potency increases at higher pH

**Vonoprazan-based regimens may restore eradication rates above 90% in the US and Europe**

Hooi Gastroenterology 2017; Graham et al 2018; Erah et al 1997

# Japan *H. pylori* Phase 3: vonoprazan triple therapy demonstrated superiority to PPI therapy

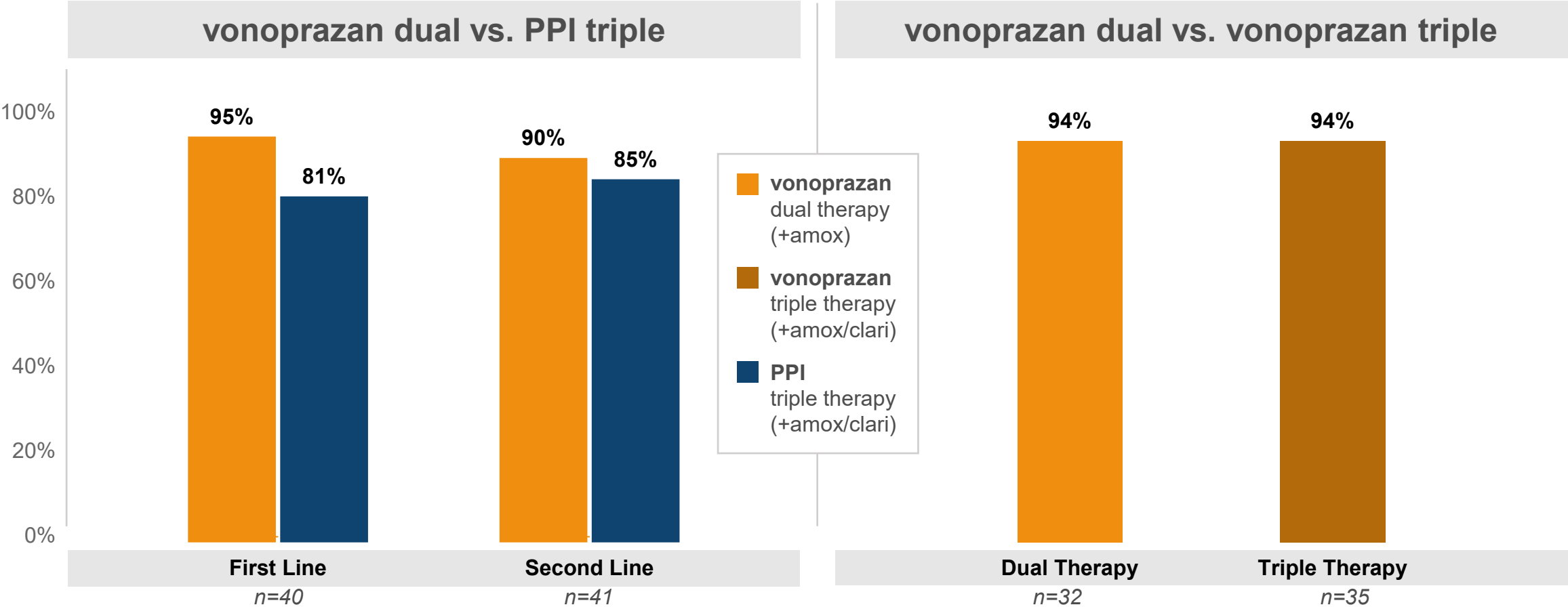
First-line triple therapy eradication rates of *H. pylori*  
(combo with amoxicillin/clarithromycin), %



\*  $p < 0.0001$  for superiority of vonoprazan-based triple therapy to lansoprazole-based triple therapy

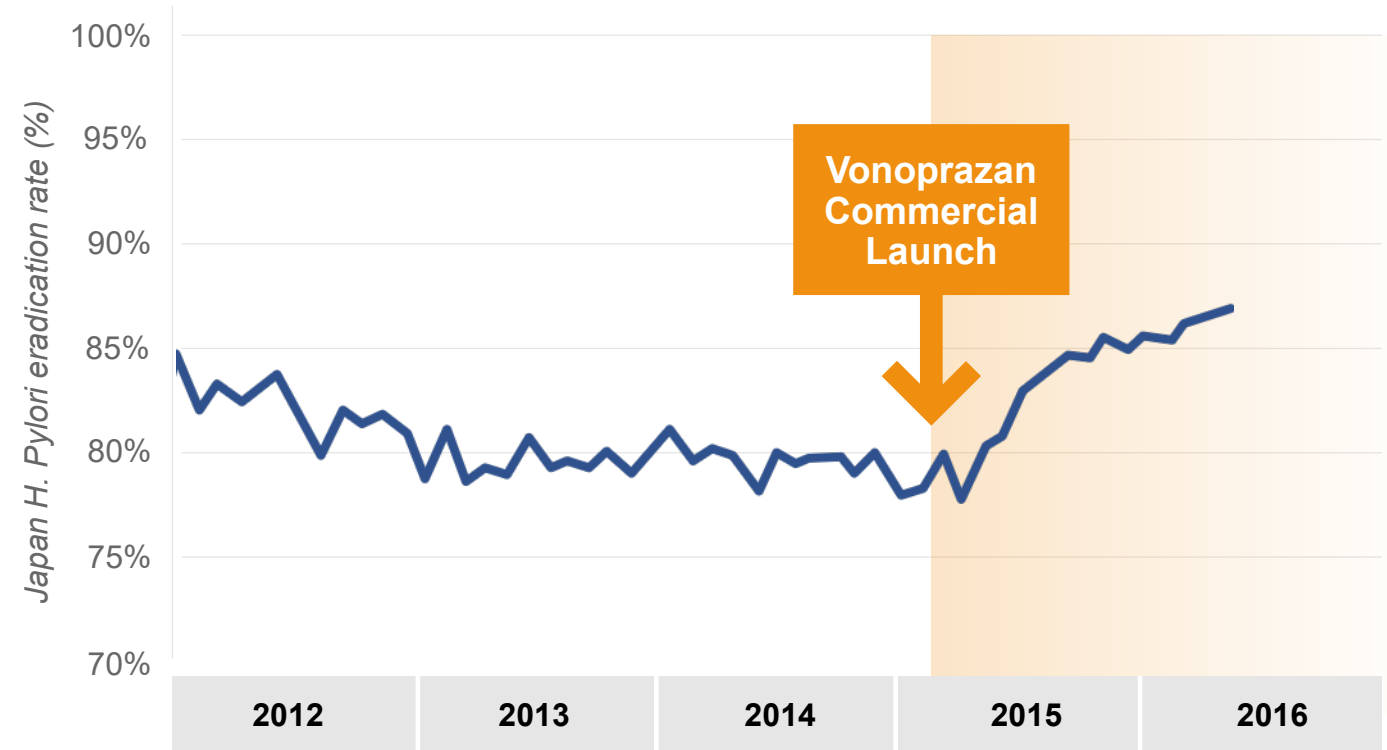
# Vonoprazan dual therapy also demonstrated >90% *H. pylori* eradication

Eradication rates of *H. pylori* (dual or triple therapy)  
(combo with antibiotics), %

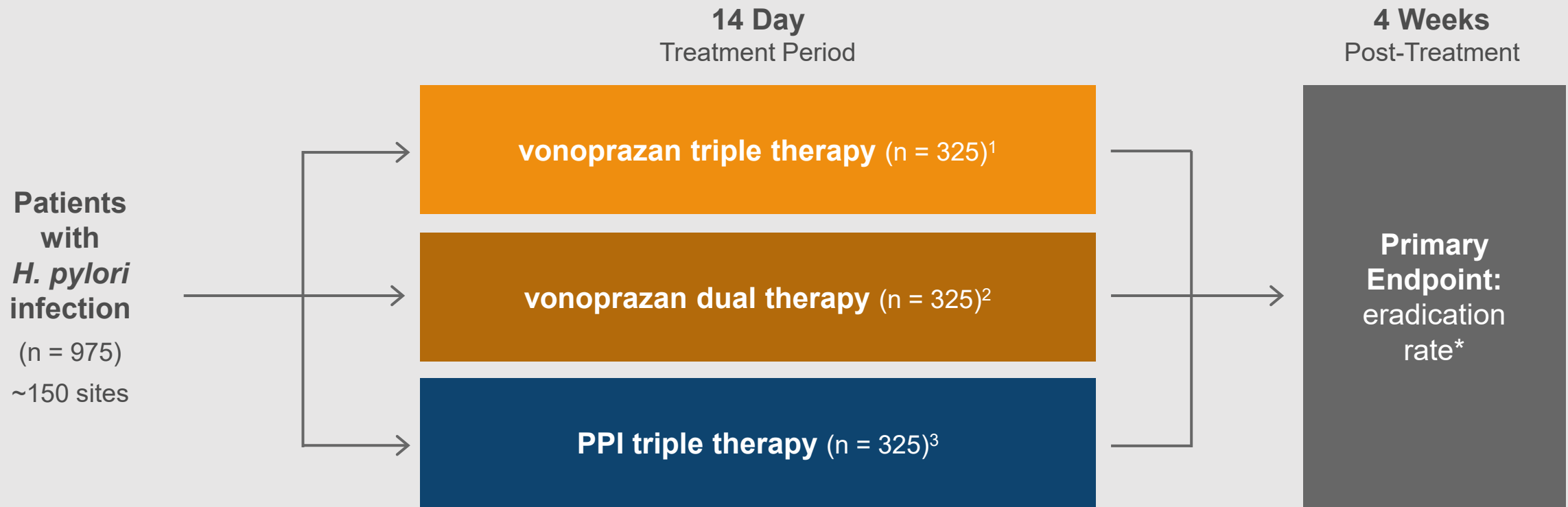


*H. pylori* eradication  
rates in Japan  
have increased since the  
launch of vonoprazan

**VONOPRAZAN-BASED  
REGIMENS ACHIEVED  
~80% SHARE IN JAPAN  
BY 2016**



# Phathom US/Europe *H. pylori* Phase 3 study design



1. vonoprazan 20 mg BID + amoxicillin 1 g BID + clarithromycin 500 mg BID
2. vonoprazan 20 mg BID + amoxicillin 1 g TID (partially blinded)
3. lansoprazole 30 mg BID + amoxicillin 1 g BID + clarithromycin 500 mg BID

Note: Diagnosis of infection and test of cure confirmed by <sup>13</sup>C-urea breath test

\*Primary analysis of non-inferiority excluding patients with infection resistant to clarithromycin and amoxicillin; key secondary analyses of superiority in patients with clarithromycin resistant infection and in all comers

# Vonoprazan safety profile **SIMILAR TO PPIs**

**6,683 subjects**  
received vonoprazan  
in clinical studies

No dose-related  
increase in adverse  
events observed

**>25 million patients**  
received vonoprazan  
since launch

## ADVERSE EVENTS IN CLINICAL DEVELOPMENT REFLECTED IN JAPANESE PRESCRIBING INFORMATION

*Incidence of 0.1-5.0%*

Diarrhea<sup>1</sup>

Elevated liver enzymes

Constipation

Rash

Nausea

Eosinophilia

## HEPATIC EVENTS OF SPECIFIC INTEREST IN LIGHT OF FIRST-GENERATION PCABs

*Pooled data across  
head-to-head  
Phase 2 and 3 studies*

ALT or AST > 3X ULN or  
Bilirubin >2X ULN

**vonoprazan**  
10 and 20mg

1.0%

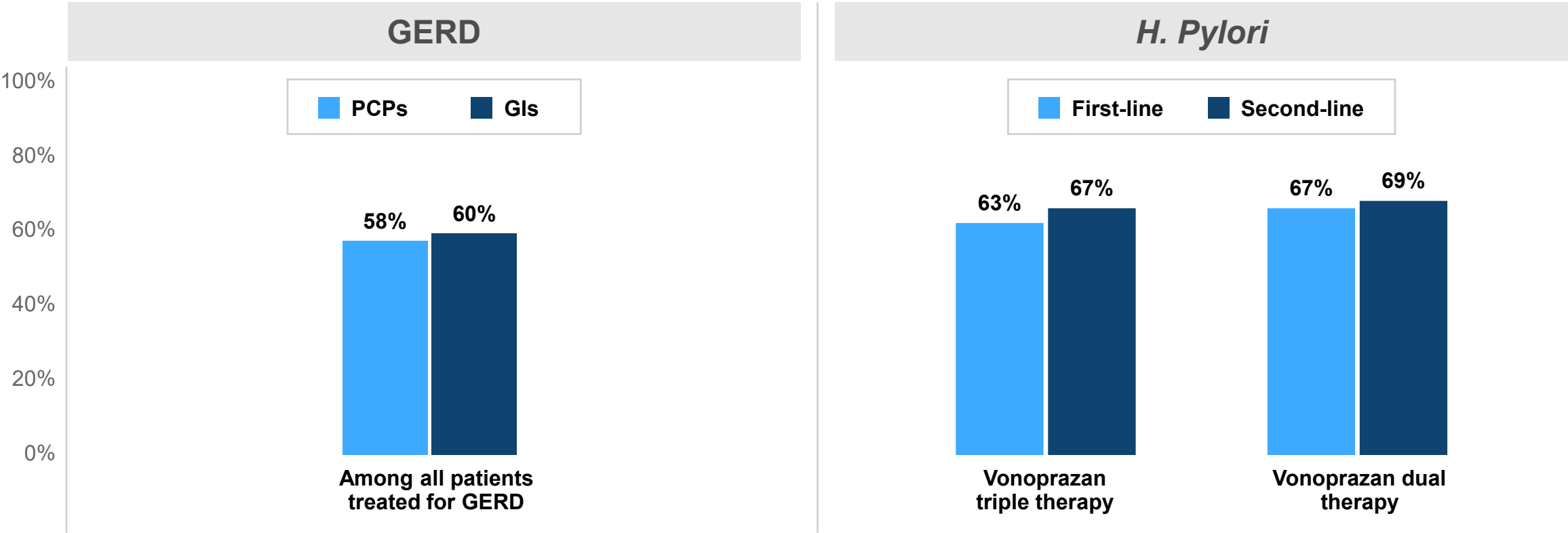
**lansoprazole**  
15 and 30mg

0.8%

1. 10.6% in combination with antibiotics for treatment of *H. pylori*

# US physicians have strong preference to prescribe vonoprazan

US physician preference share, %



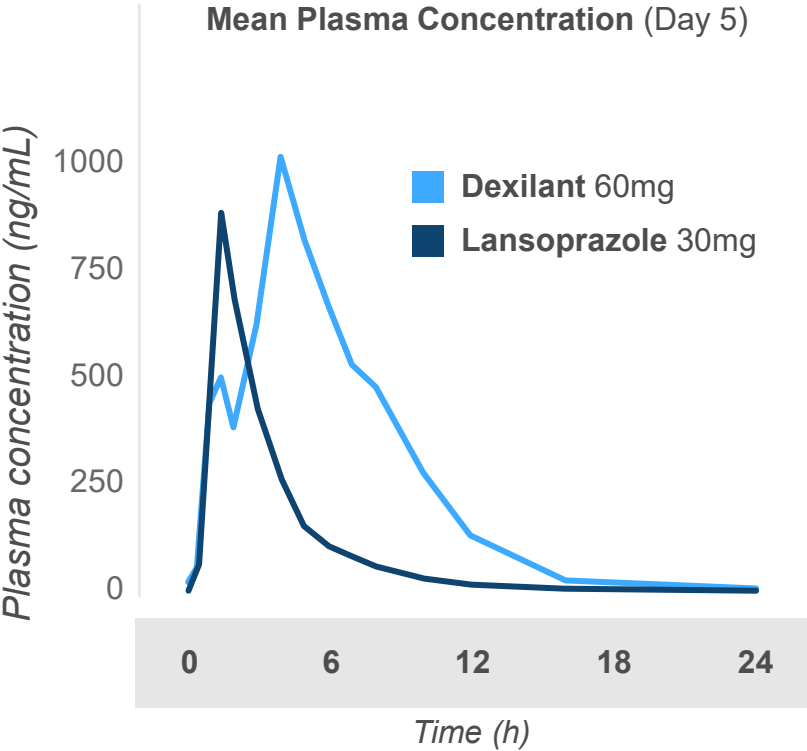
2019 US survey of 100 gastroenterologists and 100 primary care physicians



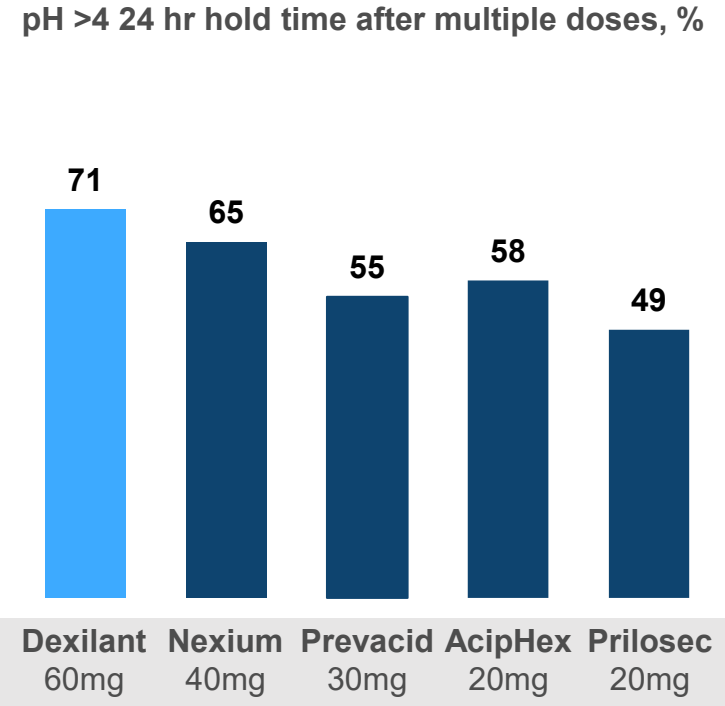
# Dexilant case study: last of the branded PPIs



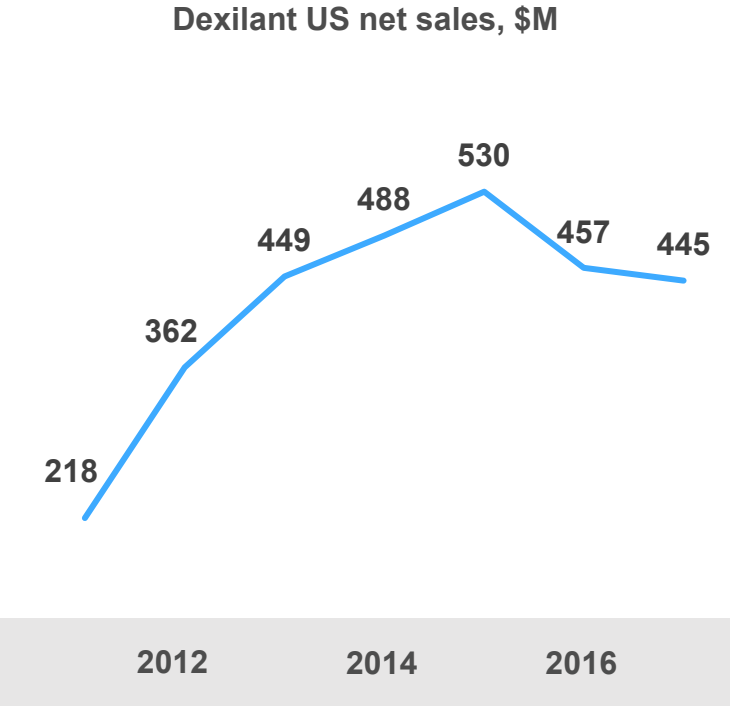
**1** Launched in 2009 as an extended release therapy



**2** Minimal differentiation vs PPIs



**3** Drove meaningful sales in a genericized market



Dexilant website (<https://www.dexilant.com/>), Takeda annual reports 2010-2017, Sugano et al 2018, Dexilant FDA label

# Dexilant case study: market access

\$9.42/dose US WAC<sup>1</sup>

~90% of commercial and ~80% of Medicare covered lives have access to Dexilant<sup>2</sup>

65% of commercial covered lives have unrestricted access without step edits or prior authorization<sup>2</sup>

35% of commercial covered lives have access at the lowest branded cost tier<sup>2</sup>

1 Dexilant Colorado Prescribing Information  
2 MMIT formulary lookup tool as of June 25, 2019  
3 Fingertip Formulary Accessed 4Q18

## FORMULARY STATUS AMONG TOP 5 PLANS

*By covered lives<sup>3</sup>*

HEALTH PLAN	COVERAGE
Aetna Self-Insured	Tier 2 Preferred
Cigna Standard 3-Tier (National)	Tier 2 Preferred
CVS Caremark Advanced Control Specialty	Tier 2 Preferred
Express Scripts National Preferred	Tier 3 Non-Preferred
UnitedHealthcare Advantage 3-Tier	Tier 3 Non-Preferred

NO STEP-EDITS OR PRIOR AUTHORIZATION

# Financial highlights

Cash and Cash Equivalents (as of 12/31/2019) <sup>1</sup>	<b>\$243.8M</b>
Debt (as of 12/31/2019) <sup>1,2</sup>	<b>\$25.0M</b>
Common Shares Issued (as of 3/12/2020) <sup>1</sup>	<b>28,964,506</b>

<sup>1</sup> December 31, 2019 Form 10-K

<sup>2</sup> Silicon Valley Bank Term Loan. Increased to \$50.0M on March 16, 2020 drawdown of additional \$25M



NASDAQ: PHAT

- ✓ Significant unmet medical need
- ✓ Established safety and efficacy in Japan
- ✓ Late-stage US/EU program
- ✓ Large commercial opportunity
- ✓ Seasoned team and investors